

**APPENDIX B**  
**MARKED-UP VERSION OF SUBSTITUTE SEQUENCE LISTING**  
**WITH MARKINGS TO SHOW CHANGES MADE**  
**(Application Serial No. 10/028,075)**

## SEQUENCE LISTING

<110> Khan, Nisar A.  
Benner, Robert

<120> Gene regulator

<130> 2183-5223US

<140> 10/028,075  
<141> 2001-12-21

<150> EP 01203748.7  
<151> 2001-10-04

<160> 175

<170> PatentIn Ver. 2.1

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Gly Val Leu Pro Ala Leu Pro Gln  
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Gly Cys Pro Arg Gly Val Asn Pro Val Val Ser Tyr Ala Val Ala Leu  
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Ser Cys Gln Cys Ala Leu  
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Pro Ser

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Cys

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Gly Cys Pro Val Cys Ile Thr Val Asn Thr Thr Ile Cys Ala Gly Tyr  
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Cys Pro Thr  
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<210> 48

<211> 37

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<223> Description of Artificial Sequence: peptide  
signalling molecule

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Pro Ile Leu Pro Gln  
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<210> 77

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<210> 79

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<210> 86  
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<210> 87  
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Val Leu Pro Gly Phe Pro
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  1                      5

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<223> Description of Artificial Sequence: pdb/1BBS/1BBS

<400> 96

Met Pro Ala Leu Pro  
1 5

<210> 97

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: AI188872

<220>

<221> MISC\_FEATURE

<222> (2)

<223> The 'Xaa' at position\_2 indicates an unknown amino acid

<400> 97

Met Xaa Arg Val Leu Gln Gly Val Leu Pro Ala Leu Pro Gln Val Val  
1 5 10 15

Cys

<210> 98

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: AI188872

<220>

<221> MISC\_FEATURE

<222> (2)

<223> The 'Xaa' at position 2 indicates an unknown amino acid

<400> 98

Met Xaa Arg Val  
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<210> 99

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: AI126906

<400> 99

Ile Thr Arg Val Met Gln Gly Val Ile Pro Ala Leu Pro Gln Val Val  
1 5 10 15

Cys

<210> 100  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: AI221581

<400> 100  
Met Thr Arg Val Leu Gln Val Val Leu Leu Ala Leu Pro Gln Leu Val  
1 5 10 15

<210> 101  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Mm.42246.3

<400> 101  
Lys Val Ile Gln Gly Ser Leu Asp Ser Leu Pro Gln Ala Val  
1 5 10

<210> 102  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Mm.42246.3

<400> 102  
Leu Asp Ser Leu  
1

<210> 103  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Mm.22430.1

<400> 103  
Val Leu Gln Ala Ile Leu Pro Ser Ala Pro Gln  
1 5 10

<210> 104  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Mm.22430.1

<400> 104  
Leu Gln Ala Ile Leu  
1 5

<210> 105  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Mm.22430.1

<400> 105  
Pro Ser Ala Pro  
1

<210> 106  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Hs.63758.4

<400> 106  
Lys Val Leu Gln Gly Arg Leu Pro Ala Val Ala Gln Ala Val  
1 5 10

<210> 107  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Hs.63758.4

<400> 107  
Leu Pro Ala Val  
1

<210> 108  
<211> 14

<212> PRT  
 <213> Artificial Sequence  
  
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 <223> Description of Artificial Sequence: Mm.129320.2  
  
 <400> 108  
 Leu Val Gln Lys Val Val Pro Met Leu Pro Arg Leu Leu Cys  
   1                  5                  10  
  
 <210> 109  
 <211> 4  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Mm.129320.2  
  
 <400> 109  
 Leu Pro Arg Leu  
   1  
  
 <210> 110  
 <211> 4  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Mm.129320.2  
  
 <400> 110  
 Pro Met Leu Pro  
   1  
  
 <210> 111  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Mm.22430.1  
  
 <400> 111  
 Pro Ser Ala Pro Gln  
   1                  5  
  
 <210> 112  
 <211> 11  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>

<223> Description of Artificial Sequence: P20155

<400> 112

Leu Pro Gly Cys Pro Arg His Phe Asn Pro Val  
1 5 10

<210> 113

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Rn.2337.1

<400> 113

Leu Val Gly Cys Pro Arg Asp Tyr Asp Pro Val  
1 5 10

<210> 114

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Rn.2337.1

<400> 114

Leu Val Gly Cys  
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<210> 115

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Hs.297775.1

<400> 115

Pro Gly Cys Pro Arg Gly  
1 5

<210> 116

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mm.1359.1

<400> 116

Leu Pro Gly Cys Pro  
1 5

<210> 117  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
sptrembl/O56177/O56177

<400> 117  
Val Leu Pro Ala Ala Pro  
1 5

<210> 118  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
sptrembl/Q9W234/Q9W234

<400> 118  
Leu Ala Gly Thr Ile Pro Ala Thr Pro  
1 5

<210> 119  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
sptrembl/Q9W234/Q9W234

<400> 119  
Pro Ala Thr Pro  
1

<210> 120  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
sptrembl/Q9IYZ3/Q9IYZ3

<400> 120  
Gly Leu Leu Pro Cys Leu Pro  
1 5

<210> 121  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
sptrembl/Q9PVW5/Q9PVW5

<400> 121  
Pro Gly Ala Pro  
1

<210> 122  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
sptrembl/Q9PVW5/Q9PVW5

<400> 122  
Leu Pro Gln Arg Pro Arg Gly Pro Asn Pro  
1 5 10

<210> 123  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
sptrembl/Q9PVW5/Q9PVW5

<400> 123  
Pro Arg Gly Pro  
1

<210> 124  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>



<223> Description of Artificial Sequence: Hs.303116.2

<400> 124

Gly Cys Pro Arg

1

<210> 125

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
pdb/1DU3/1DU3-A

<400> 125

Gly Cys Pro Arg Gly Met

1

5

<210> 126

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: pdb/1BIO/1BIO

<400> 126

Leu Gln His Val

1

<210> 127

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
pdb/1FL7/1FL7-B

<400> 127

Val Pro Gly Cys

1

<210> 128

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
pdb/1HR6/1HR6-A

<400> 128  
Cys Pro Arg Gly  
1

<210> 129  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: pdb/1H6/1HR6-A

<400> 129  
Leu Lys Gly Cys  
1

<210> 130  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: pdb/1BFA/1BFA

<400> 130  
Pro Pro Gly Pro  
1

<210> 131  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: pdb/1BFA/1BFA

<400> 131  
Leu Pro Gly Cys Pro Arg Glu Val  
1 5

<210> 132  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: pdb/1BFA/1BFA

<400> 132  
Cys Pro Arg Glu  
1

<210> 133  
<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
    swissnew/P01229/LSHB HUMAN

<400> 133  
Met Met Arg Val Leu Gln Ala Val Leu Pro Pro Leu Pro Gln Val Val  
    1                    5                    10                    15

Cys

<210> 134  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
    swissnew/P01229/LSHB HUMAN

<400> 134  
Met Met Arg Val  
    1

<210> 135  
<211> 6  
<212> PRT  
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<223> Description of Artificial Sequence:  
    swissnew/P01229/LSHB HUMAN

<400> 135  
Val Leu Pro Pro Leu Pro  
    1                    5

<210> 136  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
    swissnew/P01229/LSHB HUMAN

<400> 136  
Val Leu Pro Pro Leu Pro Gln

1 5

<210> 137  
 <211> 7  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence:  
 swissnew/P01229/LSHB HUMAN

<400> 137  
 Ala Val Leu Pro Pro Leu Pro  
 1 5

<210> 138  
 <211> 8  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence:  
 swissnew/P01229/LSHB HUMAN

<400> 138  
 Ala Val Leu Pro Pro Leu Pro Gln  
 1 5

<210> 139  
 <211> 17  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:  
 swissnew/P07434/CGHB PAPAN

<400> 139  
 Met Met Arg Val Leu Gln Ala Val Leu Pro Pro Val Pro Gln Val Val  
 1 5 10 15

Cys

<210> 140  
 <211> 4  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:  
 swissnew/P07434/CGHB PAPAN

<400> 140  
Leu Gln Ala Gly  
1

<210> 141  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
swissnew/P07434/CGHB PAPAN

<400> 141  
Val Leu Pro Pro Val Pro  
1 5

<210> 142  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
swissnew/P07434/CGHB PAPAN

<400> 142  
Val Leu Pro Pro Val Pro Gln  
1 5

<210> 143  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:  
swissnew/P07434/CGHB PAPAN

<400> 143  
Ala Val Leu Pro Pro Val Pro  
1 5

<210> 144  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:

swissnew/P07434/CGHB PAPAN

<400> 144

Ala Val Leu Pro Pro Val Pro Gln  
1 5

<210> 145

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
swissnew/Q28376/TSHB HORSE

<400> 145

Met Thr Arg Asp  
1

<210> 146

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
swissnew/Q28376/TSHB HORSE

<400> 146

Gln Asp Val Cys  
1

<210> 147

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:  
swissnew/Q28376/TSHB HORSE

<400> 147

Ile Pro Gly Cys  
1

<210> 148

<211> 5

<212> PRT

<213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:  
       sptrembl/Q9Z284/Q9Z284  
  
 <400> 148  
 Pro Ala Leu Pro Ser  
       1                  5  
  
 <210> 149  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence:  
       sptrembl/Q9UCG8/Q9UCG8  
  
 <400> 149  
 Leu Pro Gly Gly Pro Arg  
       1                  5  
  
 <210> 150  
 <211> 4  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence:  
       sptrembl/Q9UCG8/Q9UCG8  
  
  
 <400> 150  
 Leu Pro Gly Gly  
       1  
  
 <210> 151  
 <211> 4  
 <212> PRT  
 <213> Artificial Sequence  
  
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 <223> Description of Artificial Sequence:  
       sptrembl/Q9UCG8/Q9UCG8  
  
 <400> 151  
 Gly Gly Pro Arg  
       1  
  
 <210> 152  
 <211> 4  
 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: XP\_028754

<400> 152

Leu Gln Arg Gly

1

<210> 153

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: XP\_028754

<400> 153

Leu Gln Arg Gly Val

1

5

<210> 154

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: XP\_028754

<400> 154

Leu Gly Gln Leu

1

<210> 155

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SignalP (CBS)

<400> 155

Met Thr Arg Val Leu Gln Gly Val Leu Pro Ala Leu Pro

1

5

10

<210> 156

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HLA molecule



type I (A\_0201)

<400> 156

Val Leu Gln Gly Val Leu Pro Ala Leu  
1 5

<210> 157

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HLA molecule  
type I (A\_0201)

<400> 157

Gly Val Leu Pro Ala Leu Pro Gln Val  
1 5

<210> 158

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HLA molecule  
type I (A\_0201)

<400> 158

Val Leu Pro Ala Leu Pro Gln Val Val  
1 5

<210> 159

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HLA molecule  
type I (A\_0201)

<400> 159

Arg Leu Pro Gly Cys Pro Arg Gly Val  
1 5

<210> 160

<211> 9

<212> PRT

<213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: HLA molecule  
           type I (A\_0201)

<400> 160  
 Thr Met Thr Arg Val Leu Gln Gly Val  
       1                          5

<210> 161  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: MHC II (H2-Ak  
           15-mers)

<400> 161  
 Cys Pro Thr Met Thr Arg Val Leu Gln Gly Val Leu Pro Ala Leu  
       1                          5                  10                  15

<210> 162  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: MHC II (H2-Ak  
           15-mers)

<400> 162  
 Pro Gly Cys Pro Arg Gly Val Asn Pro Val Val Ser Tyr Ala Val  
       1                          5                  10                  15

<210> 163  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: HLA-DRB1\*0101  
           15-mers

<400> 163  
 Pro Arg Gly Val Asn Pro Val Val Ser Tyr Ala Val Ala Leu Ser  
       1                          5                  10                  15

<210> 164  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HLA-DRB1\*0101  
15-mers

<400> 164

Thr	Arg	Val	Leu	Gln	Gly	Val	Leu	Pro	Ala	Leu	Pro	Gln	Val	Val
1				5				10					15	

<210> 165

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HLA-DRB1\*0101  
15-mers

<400> 165

Leu	Gln	Gly	Val	Leu	Pro	Ala	Leu	Pro	Gln	Val	Val	Cys	Asn	Tyr
1				5				10					15	

<210> 166

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HLA-DRB1\*0301  
(DR17) 15-mers

<400> 166

Met	Thr	Arg	Val	Leu	Gln	Gly	Val	Leu	Pro	Ala	Leu	Pro	Gln	Val
1				5				10					15	

<210> 167

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HLA-DRB1\*0301  
(DR17) 15-mers

<400> 167

Ser	Ile	Arg	Leu	Pro	Gly	Cys	Pro	Arg	Gly	Val	Asn	Pro	Val	Val
1				5				10					15	

<210> 168

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: NMPF-56  
peptide

<400> 168

Val Ala Pro Ala Leu Pro Gln  
1 5

<210> 169

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: NMPF-62  
peptide

<400> 169

Val Val Cys Asn Tyr Arg Asp Val Arg Phe Glu Ser Ile Arg Leu Pro  
1 5 10 15

Gly Cys Pro Arg Gly Val Asn Pro Val Val Ser Tyr Ala Val Ala Leu  
20 25 30

Ser Cys Gln  
35

<210> 170

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: NMPF-67  
peptide

<400> 170

Cys Pro Arg Gly Val Asn Pro  
1 5

<210> 171

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: NMPF-70  
peptide

<400> 171

Met Thr Arg Val Leu Gln Gly Val Leu Pro Ala Leu Pro Gln  
 1 5 10

<210> 172  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: NMPF-75  
 peptide

<400> 172  
 Ser Lys Ala Pro Pro Pro Ser Leu Pro Ser Pro Ser Arg Leu Pro Gly  
 1 5 10 15

Pro Cys

<210> 173  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: NMPF-56  
 peptide

<400> 173  
 Val Ala Pro Ala Leu Pro Gln  
 1 5

<210> 174  
 <211> 17  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: NMPF-71  
 peptide

<400> 174  
 Met Thr Arg Val Leu Pro Gly Val Leu Pro Ala Leu Pro Gln Val Val  
 1 5 10 15

Cys[ ]

<210> 175  
 <211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: NMPF peptide

<400> 175

Cys Arg Gly Val Asn Pro Val Val Ser  
1 5

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